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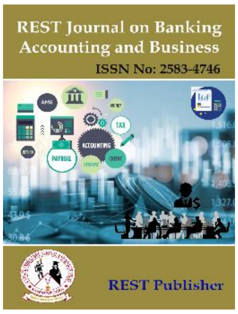

Application of TOPSIS Method in Evaluating the Performance of Insurance Companies: A Case Study

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Abstract*: Insurance is a method for managing risk, as it protects against unforeseen financial losses. When you purchase insurance, you are safeguarding yourself against possible mishaps by having an insurance company compensate you or someone you designate. If you experience an accident and are uninsured, you may be responsible for all related expenses. Having appropriate insurance can help mitigate the various risks you might encounter throughout your life. Insurance not only covers unexpected incidents but also assists in paying for routine expenses such as annual medical checkups and dental visits. Furthermore, insurance companies negotiate discounts with healthcare providers, allowing their customers to pay the reduced rates. An insurance policy has two parties: the policyholder, who is the individual or company receiving the policy, and the insurer, who is the insurance company. The policyholder need not be the insured party. A person or business can become a policyholder by purchasing an insurance policy that protects another person or company. For instance, if a company buys life insurance for an employee, the employee is the insured party, and the company is the policyholder. Accounting, auditing, and actuarial standards must be carefully applied when examining insurance businesses' financial and other reports. Finding the business risks that insurance companies must deal with requires the use of financial information in particular. The management of insurance companies' technical reserves and guarantee reserve assets is crucial for reducing these risks. According to professional organizations and nations with free market economies, the main goal of financial statements in this situation is to give potential consumers the knowledge they need to make wise decisions. The economy depends on measuring the performance of insurance businesses. However, reliable performance evaluation can be difficult due to the unpredictability and complexity of the global market as well as the growing information flow. In certain situations, traditional performance measurement techniques might not produce appropriate findings. The fuzzy multi-criteria technique has been successfully used to address this issue.Critical proportional assessment is a multi-criteria decision-making analytical tool that aids in problem-solving. The COPRAS system has been developed as a tool for decision-making under specific contexts. This method calculates both the increase and decrease of criteria and improves the quality and quantity of criteria calculation. Compared to other methods, the COPRAS system can handle many criteria and offers a higher level of benefit and usage. Alternative taken as Equity and reserves, Business assets, Provision and liabilities, financial incomes, Cost of insurance, Cost of insurance. Evaluation preference taken as Life Insurance Corporation of India, HDFC Life Insurance Co. Ltd, Max Life Insurance Co. Ltd, ICICI Prudential Life Insurance Co. Ltd, Kotak Mahindra Life Insurance Co. Ltd, Aditya Birla SunLife Insurance Co. Ltd, TATA AIA Life Insurance Co. Ltd, SBI Life Insurance Co. Ltd, Bajaj Allianz Life Insurance Co. Ltd, PNB MetLife India Insurance Co. Ltd. From the result it is seen that SBI Life Insurance Co. Ltd is got the first rank where as is the Bajaj Allianz Life Insurance Co. Ltd is having the lowest rank.*

Keywords: *Business assets, financial incomes, Cost of insurance, Insurance Companies*

1. INTRODUCTION

The allocation of funds is dependent on the business structure of an insurance company, which is determined by the magnitude of line losses and the risk characteristics of those losses. If each line is organized as a separate entity, surplus requirements increase to $171 due to the loss of diversification. Merton and Barrault argue that the reduction in surplus attributed to diversification cannot be attributed to individual taxes [1]. During a particular period, the insurance industry faced a level of instability that had never been seen before. This instability, along with the crucial role that financial statements played in determining the market valuations of major insurers, underscored the significance of uncertainty that surrounded insurance companies at that time. It was important to comprehend the financial information of insurers and its impact on their risk and value. To make it easier to utilize insurers' financial statements [2]. The insurance industry poses several intriguing issues. One such issue, which has received relatively little attention, concerns the prevalence of mutual insurance companies as opposed to investor-owned companies among the population. Mutuals account for almost half of all active life insurance and about a quarter of all active property and liability insurance [3]. Insurance companies offer policyholders protection against a variety of risks such as financial losses, health and casualty difficulties, property damage or loss, and more. Policyholders pay an insurance company premium in return for this risk coverage. This premium is used to pay for costs and to offset the potential risk of claims. order to provide long-term risk protection for high-yield investments [4]. The insurance industry professionals perceived the move by experts to venture into direct selling insurance, in collaboration with Banks and building societies in the UK, as a threat to the authenticity of traditional insurance companies. This was in line with efforts to increase their distribution strength. Although technological advancements have some providers to profit from decreased operating expenses and cutting-edge delivery techniques like direct mail, there were medium-sized insurance companies that had not fully leveraged new technology to their advantage [5]. Insurance companies offer distinctive financial services that contribute to each economy's expansion and development. These specialized financial services result from their ability to both underwrite the risks associated with monetary institutions and to raise substantial sums of money through premiums for long-term investments [6]. In the financial and credit markets, life insurance firms play an important role as institutional investors and lenders to many industries. They also possess significant stakes in several corporations. Therefore, it is crucial to carefully monitor the actions and results of life insurance firms [7]. To accomplish this, we looked at scholarly writings, business research, and publications from regulatory bodies. The business models of insurance businesses are being more and more affected by digital transformation. This presents both opportunities and challenges, especially for IT departments which play a crucial role as key enablers or inhibitors in this process [8]. Managers and regulators keep a careful eye on insurance businesses because they could fail. However, management also keeps an eye on the risk because it affects the insurance company's market value and cost of capital. The standard deviation of returns and beta are two frequently used risk indicators. Due to each company's distinctive financial features, some companies are more susceptible to market conditions than others, and beta measures how responsive firm returns are to market returns. Similar to how stock return standard deviation differs between firms, different firm-specific traits cause differing degrees of performance between firms [9]. The ability of an insurer to create a particular set of outputs, such as premiums and investment returns, using inputs like management and sales employees and financial resources is referred to as efficiency in the insurance sector. An insurer is regarded as technologically efficient in the context of the existing state of production technology in the sector if it is impossible to reduce its resource consumption without diminishing output [10]. In the case of insurance firms, the book value of equity is equally important to profitability, in contrast to most industries where some type of revenue structure often serves as the major value driver. This is due to several factors, including the regulatory capital share, and financial structure of the majority of insurance businesses' assets and liabilities [11]. Organizational performance is crucial for management as it represents the outcome achieved by an individual or group of individuals within an organization, which is aligned with their authority and responsibility in pursuing the organization's objectives, does not breach the law, and is consistent with moral values [12]. In addition to possessing sound mathematical properties, the capacity of the relational model put forth in this research to spot anomalous outcomes that independently occurred in the case of non-Taiwanese life insurance businesses serves as evidence of its usefulness. This indicates that the model is more reliable in assessing skills and can more accurately pinpoint the causes of inefficiency. Furthermore, the model's structure enables the concept of performance degradation to be extended to systems with multiple components [13]. The context of the current issue of the capital allocation debate is that there are different perspectives on how to allocate an insurance company's equity funding for several business sectors. Therefore, assessing the usefulness of capital allocation methods depends on the economic goals of the company and the specific context in which the allocation is taking place. It is important to consider the different views and arguments regarding capital allocation to make informed decisions that align with the company's objectives [14]. It is noteworthy that the three businesses highlighted in the research place more emphasis on integrating IT with business objectives and procedures than they do on using IT merely to gain a competitive edge. This suggests that the companies may prioritize operational efficiency and effectiveness over innovation and differentiation through IT. It is also worth considering the level of stakeholder participation in the information strategy process, with executive boards, IT management, and line management all playing significant roles. This highlights the importance of collaboration and communication among different levels of management in achieving successful information strategies [15]. That sounds like an interesting research topic. Do you have any specific questions or points you would like to discuss regarding the impact Impact intellectual property on Iranian insurance companies' financial success [16]

Indeed, the lack of innovation in the insurance industry has been a longstanding issue. However, with the rise of digital technologies, insurance companies are now realizing the importance of improving the customer experience and are investing heavily in new digital tools and platforms to do so. These include mobile apps, chatbots, and online portals that provide customers with easier access to information about their policies and claims, as well as more transparent pricing and coverage options [17]. The insurance industry is highly competitive, and customers often switch between insurers based on factors such as price, coverage, and convenience. As a result, insurance companies need to focus on improving the customer experience and building customer loyalty. Information systems can help achieve this by providing better customer service, personalized policies, and faster claims processing. They can also assist insurers with data analysis to better comprehend client demands and preferences and create more successful marketing plans [18]. The use of information systems and technology can help insurance companies stay competitive by improving customer experience, reducing costs, and enhancing efficiency. With the rise of digital transformation, customers now have more options than ever before, and their loyalty to a particular insurance company may be influenced by factors such as the ease of use of online platforms, the speed and accuracy of claims processing, and the availability of personalized services. Therefore, insurance companies must embrace technology to meet changing customer expectations and stay competitive in the market [19]. The statistical technique of stochastic frontier analysis is used to calculate the effectiveness of companies by comparing their actual performance to an estimated performance frontier. In this case, the study is focused on the European insurance market and aims to calculate the insurance industry's adaptable Fourier cost functions operating in this market. The study differentiates between living, non-living, and joint ventures and estimates one-sided and two-sided variances using a maximum likelihood approach. By modeling error terms jointly with boundaries, the approach allows for the control of heterogeneity, and estimation of company size on X-inefficiency. The goal of the study is to shed light on the European insurance market's efficiency and potential efficiency-reducing issues [20].

2. RESULT AND DISCUSSION

Alternatives:

Equity and reserves: The part of a firm's properties held by the investors is referred to as equities. It represents the value that shareholders have contributed to the company, including capital contributions and retained earnings. Equity can be further broken down into contributed capital and retained earnings, which make up the two primary parts. The funds that shareholders have contributed to the business are referred to as contributed capital, including the sale of common or preferred stock. Retained earnings, on the other hand, are the profits that a company has earned over time and retained for future use rather than distributed to shareholders as dividends.

Business assets: Business assets refer to any tangible or intangible resources that a company owns and uses to generate income or provide value to its customers. These assets can be categorized into several different types, including Tangible assets: These are physical assets that can be touched and seen, such as buildings, equipment, inventory, and cash. Intangible assets: These are non-physical assets that have value but cannot be seen or touched, such as patents, trademarks, copyrights, and goodwill. Financial assets: These are investments that a company holds, such as stocks, bonds, and other securities. Human assets: These are the people who work for the company and provide knowledge, skills, and expertise, such as employees, managers, and executives. Natural assets: These are resources that a company uses to create its products or services, such as land, water, and minerals. Business assets are essential for the operation and growth of a company. They provide a source of value that can be leveraged to generate revenue, attract investors, and support future growth opportunities. Companies need to manage their assets effectively, including monitoring their value, maintaining and protecting them, and disposing of them when they are no longer needed.

Provision and liabilities: Provisions and liabilities are both terms used in accounting to represent obligations that a company has to pay out money in the future. While both terms represent future financial obligations, there are some key differences between the two: Provisions: A provision is a potential liability that is recognized in a company's financial statements when there is uncertainty over the amount or timing of a future payment. Provisions are recognized as a balance sheet current liability and are typically created to cover potential future expenses, such as warranty claims, legal disputes, or environmental cleanup costs. Provisions are recorded based on estimates and may be adjusted in the future as more information becomes available. Examples of liabilities include accounts payable, loans, and bonds. Overall, provisions and liabilities are both important components of a company's financial structure and represent future financial obligations that must be managed effectively. It is important for companies to accurately estimate and record these obligations in their financial statements to ensure that they are properly managing their financial risks and maintaining the confidentiality of their stakeholders.

financial incomes: Financial income is the revenue or earnings that a company generates from its investments, financial assets, and other financial instruments. Financial income can come from a variety of sources, including Interest income: This is the income earned from interest-bearing investments, such as bonds, bank deposits, and other debt instruments. Dividend income: This is the income earned from stocks and other equity investments that pay dividends. Gains from the selling of assets like stocks or real estate that have increased in value are referred to as capital gains. Rental income: This is the money received from renting out or leasing real estate., such as real estate or equipment. Foreign exchange gains: This is the income earned from changes in currency exchange rates. Other financial gains: This includes any other financial income that a company may earn, such as commissions, fees, or royalties. For many businesses, financial income is a significant source of revenue particularly those in the financial services industry. It can provide a stable source of income and help to diversify a company's revenue streams. However, financial income can also be subject to market volatility and other risks, and companies must manage these risks effectively to ensure sustainable financial performance.

Cost of insurance: The cost of insurance refers to the amount that an individual or company pays to an insurance provider in exchange for coverage against potential losses or damages. There are several types of insurance that individuals and companies may need to pay for, including Health insurance: This type of insurance covers medical expenses and can be purchased by individuals or provided by employers as part of a benefits package. Property and casualty insurance: This type of insurance covers damages or losses to property, such as homes, vehicles, or businesses. Life insurance: This type of Insurance offers financial security to the policy's beneficiaries in the case of an insured person's death. Liability insurance: This type of insurance provides coverage for damages or legal expenses resulting from accidents or other incidents for which the insured person or company is held responsible. The cost of insurance is typically determined by the insurance provider based on actuarial calculations and risk assessment. Insurance providers consider a variety of factors when setting premiums, including the age and health of the insured person, the value of the insured asset, the history of claims or losses associated with the policy, and the level of coverage required.

Evaluation preferences:

Life Insurance Corporation of India: India's government owns the insurance and investment firm Life Insurance Corporation of India (LIC). One of India's biggest insurance organisations, it was founded in 1956 and provides both people and companies with a variety of life insurance and investment products. The business is well renowned for its substantial client base, wide distribution network, and dedication to social welfare initiatives. The expansion of the Indian insurance business and the growth of the nation's economy have both been significantly aided by LIC.

HDFC Life Insurance Co. Ltd: Private life insurance provider HDFC Life Insurance Co. Ltd. serves both individuals and businesses in India by providing a variety of insurance and investment solutions. As a joint venture between the renowned international investment firm Standard Life Aberdeen plc and Housing Development Finance Corporation Limited (HDFC), the business was founded in 2000. The innovative products, client-focused philosophy, and robust distribution network of HDFC Life are well-known. The business is one of India's fastest-growing insurance companies and has won numerous honours and accolades for its success.

Max Life Insurance Co. Ltd: Leading private life insurance provider in India is Max Life Insurance Co. Ltd. The business was founded in 2000 as a partnership between MS&AD Insurance Group Holdings, Inc. subsidiary Mitsui Sumitomo Insurance Co. and Max Financial Services Ltd. Term insurance, savings plans, kid plans, retirement plans, and group plans are just a few of the life insurance and investment options that Max Life provides to both people and organisations. The business is renowned for its customer-focused philosophy, robust distribution system, and dedication to innovation and technology. Max Life is one of the fastest-growing life insurance firms in India and has won numerous accolades for its work.

ICICI Prudential Life Insurance Co. Ltd: Leading private life insurance provider in India is ICICI Prudential Life Insurance Co. Ltd. It is a partnership between Prudential Corporation Holdings Limited, one of the world's top financial services companies, and ICICI Bank Limited, one of India's largest private sector banks. The organisation provides both people and businesses with a variety of life insurance and investment solutions, such as term insurance, savings plans, child plans, retirement plans, and group plans. The reputation of ICICI Prudential Life Insurance is built on its cutting-edge offerings, robust distribution system, and dedication to client satisfaction. The business is among the best life insurance businesses in India and has won numerous accolades for its success.

Kotak Mahindra Life Insurance Co. Ltd: An independent life insurance provider in India is called Kotak Mahindra Life Insurance Co. Ltd. It was founded in 2001 and is a division of one of India's top private sector banks, Kotak Mahindra Bank Limited. Term insurance, savings plans, kid plans, retirement plans, and group plans are just a few of the life insurance and investment options that Kotak Mahindra Life Insurance provides to both people and organisations. The business is renowned for its client-centered philosophy, cutting-edge goods, and robust distribution system. One of the fastest-growing life insurance firms in India, Kotak Mahindra Life Insurance has won numerous accolades for its work.

Aditya Birla SunLife Insurance Co. Ltd: Leading private life insurance provider in India is Aditya Birla SunLife Insurance Co. Ltd. It is a partnership between Sun Life Financial Inc., a preeminent provider of financial services internationally, and the Aditya Birla Group, one of the biggest conglomerates in India. The organisation provides both people and businesses with a variety of life insurance and investment solutions, such as term insurance, savings plans, child plans, retirement plans, and group plans. Aditya Birla SunLife Insurance is renowned for its superior clientele service, cutting-edge goods, and wide-ranging distribution system. The business is among the best life insurance businesses in India and has won numerous accolades for its success.

TATA AIA Life Insurance Co. Ltd: A renowned global provider of insurance and financial services, AIA Group Limited, and Tata Sons Private Limited, one of India's greatest commercial conglomerates, have partnered to form TATA AIA Life Insurance Co. Ltd. The organisation provides both people and businesses with a variety of life insurance and investment solutions, such as term insurance, savings plans, child plans, retirement plans, and group plans. The company TATA AIA Life Insurance is renowned for its dedication to its customers, cutting-edge products, and cutting-edge technology. One of the fastest-growing life insurance firms in India, the business has won numerous accolades for its success.

SBI Life Insurance Co. Ltd: Leading private life insurance provider in India is SBI Life Insurance Co. Ltd. It is a partnership between BNP Paribas Cardif, one of the world's top insurance companies, and State Bank of India, one of the country's biggest public sector banks. SBI Life provides both people and businesses with a vast array of life insurance and investment solutions, such as term insurance, savings plans, child plans, retirement plans, and group plans. The business is renowned for its extensive distribution network, client-centered philosophy, and emphasis on technological innovation. One of the leading life insurance providers in India is SBI Life Insurance, which has won numerous accolades for its work.

Bajaj Allianz Life Insurance Co. Ltd: Leading private life insurance provider in India is Bajaj Allianz Life Insurance Co. Ltd. It is a partnership between Allianz SE, a preeminent international insurance firm, and Bajaj Finserv Limited, the holding company for the financial services divisions of the Bajaj Group. Term insurance, savings plans, kid plans, retirement plans, and group plans are just a few of the life insurance and investment solutions that Bajaj Allianz Life provides to both private consumers and commercial clients. The business is renowned for its client-centered philosophy, cutting-edge goods, and robust distribution system. One of the life insurance firms in India with the quickest growth is Bajaj Allianz Life Insurance, which has won numerous accolades for its work.

PNB MetLife India Insurance Co. Ltd: Leading private life insurance provider in India is PNB MetLife India Insurance Co. Ltd. It is a partnership between MetLife International Holdings LLC, a preeminent international insurance firm, and Punjab National Bank Limited, one of India's largest public sector banks. PNB MetLife provides both people and businesses with a vast array of life insurance and investment solutions, including as term insurance, savings plans, child plans, retirement plans, and group plans. The business is renowned for its client-centered philosophy, cutting-edge goods, and robust distribution system. One of the leading life insurance providers in India is PNB MetLife, which has won numerous accolades for its work.

Complex Proportionality Assessment (**COPRAS):** Complex proportionality assessment (COPRAS) the weighted mean and geometric integration operators integrate the pifss information. Then, to solve the decision problems COPRAS and integration operators basically two algorithms we create. +e COPRAS method zavadskas and introduced by many. Every compare alternative and benchmark weights taking into account their calculating priorities. In all such methods, to rank the given alternatives one of the most suitable methods COPRAS is and quantity and broadly to qualitative analysis is used. COPRAS method is engineering problems in computation time means less, more basic, good a comparative analysis of methods transparency and their graphical about co-strategies greater possibilities of understanding indicates. Hajiaka et al in literature, various of cobra's method in fuzzy environment there are many applications [13]. To enhance the evaluation efficiency of COPRAS, stochastic COPRAS (COPRAS-s) stochastic decision making named as complex using process proportionality rating (COPRAS) approach. In the COPRAS-s, scale significance performance of weights and alternatives a fixed number of values decision maker (dm) estimates minimum and maximum from a uniform distribution over a range of values by generating random numbers determined. Thus, the number of experts increased and different opinions because of the incorporation, the decision-making process done effectively [14]. Among these methods, cobras recent attracted more inquiries. As a compromise method, cobras' method is better rate of settlement and worse of the ratio for the best solution basically determines a solution. Unlike other madm methods, the copras method is step-by-step dependent on rankings and reasoning importance to make selection and both application degrees uses. Chatterjee et al conducted comparative analysis, ahp, others like vikor and topsis compared to methods, copras-based the technique requires less evaluation time, very straight forward and graphical explanation also shows high reliability. In literature, cobras have many uses [15]. This method is a fine-ideal answer and one associated with the terrible-perfect answer determines the solution, consequently a compromise mcdm method can be considered. First, the COPRAS system under deterministic conditions created for decision making. Uncertainty in decision making is a as an inevitable feature, of cobras method in this study an extended form is proposed [16]. Origin of cobras method is mcdm led to increased use of copras in javadskas et al. Cobras method selected for the project using residential appliances. Zavatskas and many others. In an environment of uncertainty combined grey-cobras contractors rated with approach. Korabe et al. The copras approach using industrial robots a formal selection was made. Yastani et al. Green suppliers qfd and copras for evaluation with integrated model created by zheng et al. For reluctant linguistic preferences by using copras assessment of severity of lung disease did vahdani et al. Gap with the COPRAS approach valued in an ambiguous context robots. Mousavi et al. Comparison with other mcdm methods for selection of auxiliary equipment by performance of the COPRAS approach researched. Chatterjee et al [17]. Theoretically sustainable eligibility of city cell for small city to evaluate, several criteria complex proportions with of assessment system (COPRAS) application is provided. the parameters efficient calculation and city of visualizing the abstract for purpose this time geography linked to information system [18]. COPRAS method of information can be processed from different angles. Exacerbation in copras patients indicators for assessment, the more they have values, patients better body status and price standards, the better the values they've, the poor bodily situation of sufferers which might be divided into benefit standards. Similarly, the cobras system is complex based on proportional calculation considering two criteria, this is much compared to other methods contains accurate information, the handling is cost criterion or this is a measure of goodness [19]. To achieve the ranking of alternatives, the value of each attribute should also contain their values and operational requirements to evaluate alternative to complement a decision-making process should be used. Available attribute data size or can be qualitative. Contradictory decision making is influenced by criteria to solve a selection trouble in situations madm approach COPRAS is useful. Here, the situation of device selection COPRAS explained and up to date ranking is executed by method. Using the proposed method, the rank received is very found to be reliable [20]. In this manuscript, known as if-COPRAS method many with intuitively ambiguous information criteria decision making (Mcdm) difficulty solving problems we use the proportional assessment (COPRAS) method we provide in this manner, a to estimate scale weights a new formula has been developed, in which objective weights are from a different measurement system are calculated. For this, the new parameter difference and entropy measures there are some desirable ones that have been explored properties are also discussed. Complex proportionality assessment (COPRAS) by coefficient of gray number (COPRAS-g) methods complex proportionality assessment material selection using this article attempts to address the issues, different at the same time subject selection criteria and considering their relative importance takes these two methods rankings obtained using the past almost with those obtained by the researchers confirm. Of accepted methods feasibility and applicability two cases to prove time examples are illustrated

3. RESULT AND DISCUSSION

TABLE 1. Insurance Companies

	Insurance Companies				
	Equity and reserves	**Business assets**	**Provision and liabilities**	**Financial incomes**	**Cost of insurance**
Life Insurance Corporation of India	489211	139865500	90944400	532000	39625100
HDFC Life Insurance Co. Ltd	376456	39123700	1478100	4209200	3143100
Max Life Insurance Co. Ltd	241766	24725100	548500	2743300	1238600
ICICI Prudential Life Insurance Co. Ltd	191993	21174200	1974900	2400500	7343700
Kotak Mahindra Life Insurance Co. Ltd	428617000	1442870100	1014253100	38436600	443531000
Aditya Birla SunLife Insurance Co. Ltd	271117800	806081800	534964000	50460500	202429300
TATA AIA Life Insurance Co. Ltd	667398	80336100	13596300	2101500	1502300
SBI Life Insurance Co. Ltd	727860000	2022645300	1294785300	22159400	448757500
Bajaj Allianz Life Insurance Co. Ltd	856.065	179958200	94351700	6246900	14802500
PNB MetLife India Insurance Co. Ltd	39254900	57234400	17979500	4854300	4685600

Figure 1 Shows the The table provided appears to show the financial data of various insurance companies operating in India. Equity and reserves: This represent the amount of money that the company's shareholders have invested in the company, as well as any profits that have been retained within the company. It is essentially the company's net worth. Business assets: This refers to the total value of assets owned by the company, including investments, property, and equipment. Provision and liabilities: This represents the amount of money that the

company owes to its policyholders, as well as other financial obligations such as salaries, taxes, and rent. Financial incomes: This includes the company's revenue from investments, such as interest and dividends. Cost of insurance: This refers to the total amount of money that the company pays out in claims to policyholders. Based on the data provided in the table, we can see that Life Insurance Corporation of India has the highest equity and reserves, followed by SBI Life Insurance Co. Ltd and Kotak Mahindra Life Insurance Co. Ltd. Kotak Mahindra Life Insurance Co. Ltd has the highest business assets, followed by Aditya Birla SunLife Insurance Co. Ltd and SBI Life Insurance Co. Ltd. SBI Life Insurance Co. Ltd has the highest provision and liabilities, followed by Kotak Mahindra Life Insurance Co. Ltd and Aditya Birla SunLife Insurance Co. Ltd. The highest financial income is reported by Kotak Mahindra Life Insurance Co. Ltd, followed by SBI Life Insurance Co. Ltd and Aditya Birla SunLife Insurance Co. Ltd. Finally, the cost of insurance is highest for SBI Life Insurance Co. Ltd, followed by Kotak Mahindra Life Insurance Co. Ltd and Aditya Birla SunLife Insurance Co. Ltd.

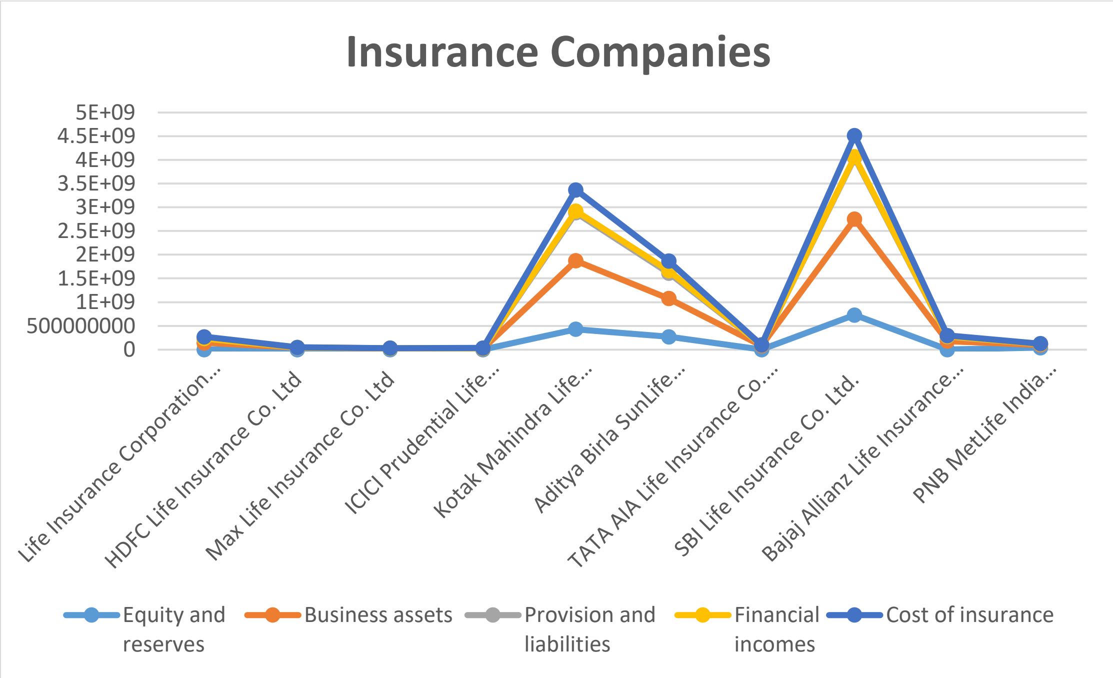

FIGURE 1. Insurance Companies

Figure 1 Shows the Equity and reserves it is seen that SBI Life Insurance Co. Ltd is showing the highest value for Bajaj Allianz Life Insurance Co. Ltd is showing the lowest value. Business assets it is seen that Kotak Mahindra Life Insurance Co. Ltd is showing the highest value for ICICI Prudential Life Insurance Co. Ltd is showing the lowest value. Provision and Liabilities it is seen that Getting Electricity is showing the highest value for Max Life Insurance Co. Ltd is showing the lowest value. Financial incomes it is seen that Aditya Birla SunLife Insurance Co. Ltd is showing the highest value for Max Life Insurance Co. Ltd is showing the lowest value. Cost of insurance it is seen that SBI Life Insurance Co. Ltd is showing the highest value for Max Life Insurance Co. Ltd is showing the lowest value.

TABLE 2. Normalized Data

Normalized Data				
Equity and reserves	**Business assets**	**Provision and liabilities**	**Financial incomes**	**Cost of insurance**
0.0003	0.0291	0.0297	0.0040	0.0340
0.0003	0.0081	0.0005	0.0314	0.0027
0.0002	0.0051	0.0002	0.0205	0.0011
0.0001	0.0044	0.0006	0.0179	0.0063
0.2918	0.2997	0.3309	0.2865	0.3800
0.1846	0.1674	0.1745	0.3762	0.1735
0.0005	0.0167	0.0044	0.0157	0.0013
0.4955	0.4202	0.4225	0.1652	0.3845
0.0000	0.0374	0.0308	0.0466	0.0127
0.0267	0.0119	0.0059	0.0362	0.0040

Table 2 shows the normalized data which is calculated from the data set each value is calculated by the same value on the table 1. Insurance Companies divided by the sum of the column of the above tabulation.

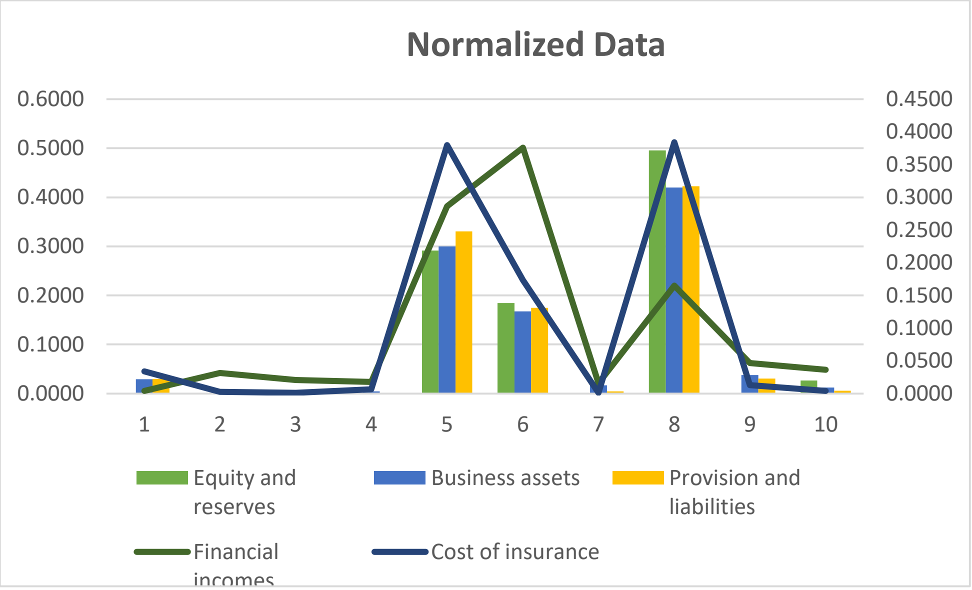

FIGURE 2. Normalized Data

TABLE 3. Weight

Weight				
0.25	0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25	0.25

Table 3 shows the weight of the weight is equal for all the value in the set of data in the table 1. The weight is multiplied with the previous table to get the next value.

TABLE 4. Weighted normalized decision matrix

Weighted normalized decision matrix				
8.33E-05	0.007263	0.007418	0.000991	0.008488
6.41E-05	0.002032	0.000121	0.007845	0.000673
4.11E-05	0.001284	4.47E-05	0.005113	0.000265
3.27E-05	0.0011	0.000161	0.004474	0.001573
0.072953	0.074931	0.082732	0.071633	0.09501
0.046146	0.041861	0.043637	0.094042	0.043363
0.000114	0.004172	0.001109	0.003916	0.000322
0.123885	0.105039	0.105615	0.041298	0.09613
1.46E-07	0.009346	0.007696	0.011642	0.003171
0.006681	0.002972	0.001467	0.009047	0.001004

Table 4 shows the weighted normalization decision matrix it is calculated by multiplying the weight and performance value in table 2 and table 3.

TABLE 5. Bi and Ci and Min (Ci)/Ci and Qi and Ui and Rank

	Bi	Ci	Min (Ci)/Ci	Qi	Ui	Ui	Rank
Life Insurance Corporation of India	0.014856	0.00948	0.447092	0.067721	19.99788	0.200248	7
HDFC Life Insurance Co. Ltd	0.002216	0.008518	0.49758	0.061051	18.05255	0.180526	8
Max Life Insurance Co. Ltd	0.00137	0.005378	0.788094	0.094556	27.95965	0.279596	5
ICICI Prudential Life Insurance Co. Ltd	0.001293	0.006047	0.700911	0.084171	24.8888	0.248888	6
Kotak Mahindra Life Insurance Co. Ltd	0.230615	0.166643	0.025433	0.233623	69.08109	0.690811	2
Aditya Birla SunLife Insurance Co. Ltd	0.131643	0.137405	0.030845	0.135291	40.00479	0.400048	3
TATA AIA Life Insurance Co. Ltd	0.005395	0.004238	1	0.123637	36.55872	0.365587	4
SBI Life Insurance Co. Ltd	0.33454	0.137428	0.03084	0.338186	100	1	1
Bajaj Allianz Life Insurance Co. Ltd	0.017042	0.014813	0.28612	0.050873	15.04298	0.15043	10
PNB MetLife India Insurance Co. Ltd	0.01112	0.010051	0.421701	0.060983	18.03235	0.180324	9

Table 5 shows the value of Bi, Ci, Min (Ci)/Ci the Ci is calculated from the sum formula used. Qi & Ui & Ui % & Rank value Qi sum, minimum formulas using this table. the final result of this paper the Life Insurance Corporation of India is in 7th rank, the HDFC Life Insurance Co. Ltd is in 8th rank, the Max Life Insurance Co. Ltd is in 5th rank, the ICICI Prudential Life Insurance Co. Ltd is in 6th rank, the Kotak Mahindra Life Insurance Co. Ltd is in 2nd rank, the Aditya Birla SunLife Insurance Co. Ltd is in 3rd rank, the TATA AIA Life Insurance Co. Ltd is in 4th rank, the SBI Life Insurance Co. Ltd is in 1st rank, the Bajaj Allianz Life Insurance Co. Ltd is in 10th rank, the PNB MetLife India Insurance Co. Ltd is in 9th rank. The final result is done by using the COPRAS method.

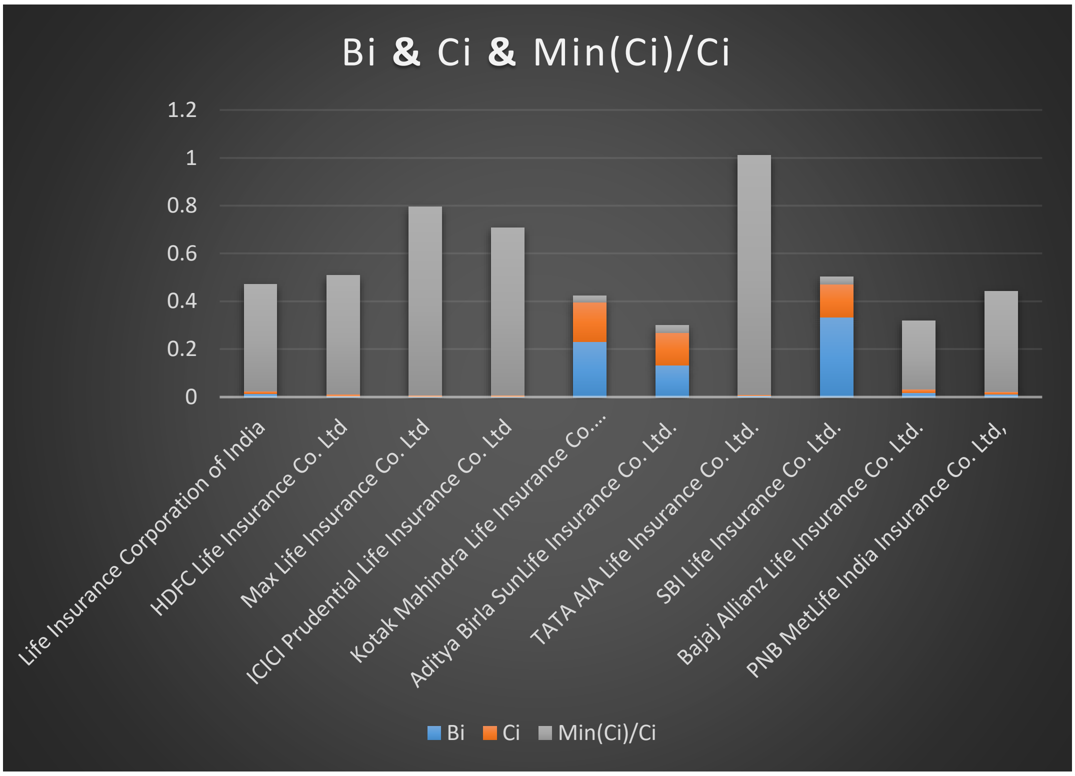

FIGURE 3. Bi, Ci, Min (Ci)/Ci

Figure 3 shows the value of Bi, Ci, Min (Ci)/Ci the Ci is calculated from the sum formula used.

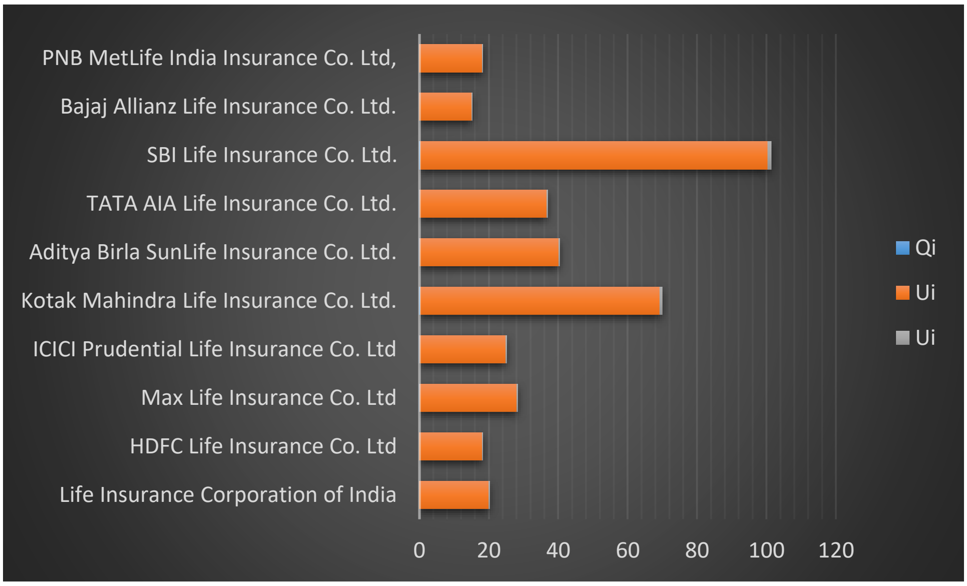

FIGURE 4. Qi&Ui

Figure 4 shows the Qi & Ui & Ui % & Rank value Qi sum, minimum formulas using this graphical view.

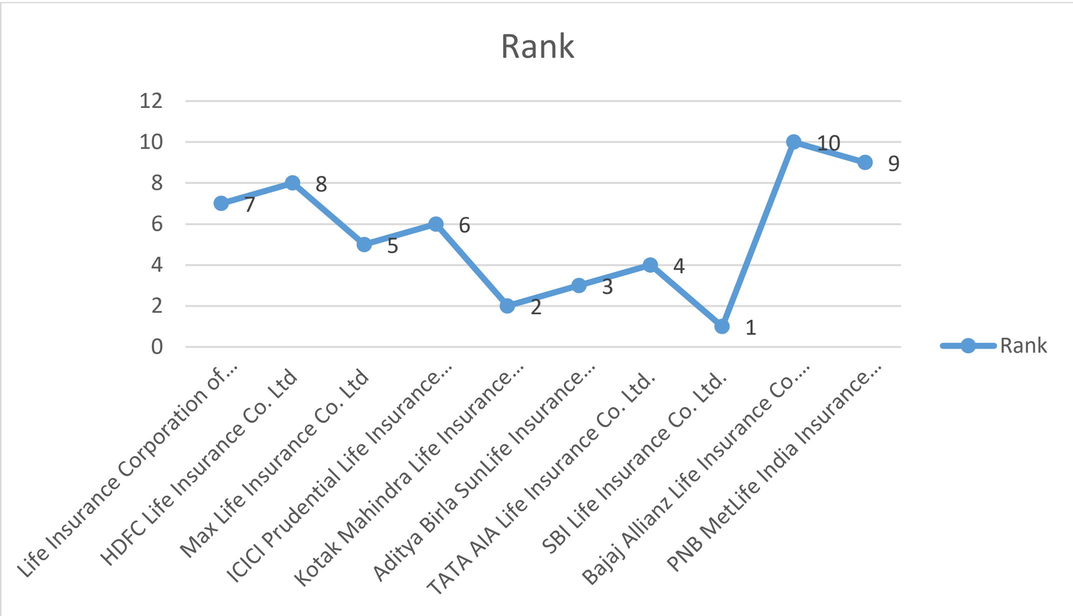

FIGURE 5. Rank

Figure 5 shows the graphical view of the final result of this paper Using the COPRAS method, the final rankings for the life insurance companies in India are as follows: SBI Life Insurance Co. Ltd in 1st place, Kotak Mahindra Life Insurance Co. Ltd in 2nd place, Aditya Birla Sun Life Insurance Co. Ltd in 3rd place, TATA AIA Life Insurance Co. Ltd in 4th place, Max Life Insurance Co. Ltd in 5th place, ICICI Prudential Life Insurance Co. Ltd in 6th place, Life Insurance Corporation of India in 7th place, HDFC Life Insurance Co. Ltd in 8th place, PNB MetLife India Insurance Co. Ltd in 9th place, and Bajaj Allianz Life Insurance Co. Ltd in 10th place.

4. CONCLUSION

the information about insurance and its importance in managing risks. Insurance indeed helps to protect against unexpected financial losses, and it is important to have insurance to avoid being responsible for all related costs in the event of an accident. I also understand that the insurance industry was not as significantly impacted by the economic crisis as the banking industry, but it still experienced changes in the corporate and commercial landscape as a result of the crisis and subsequent recession. Management plays an important role in preparing financial statements and making wise financial judgments and producing reliable financial statements can be affected by various factors including the type of fund, the role of management, the role of auditors, and the quality of information disclosed. It is interesting to know that the insurance market in Serbia is still growing, with increasing premiums earned by individuals and a rising rate of premium for the total GDP. This suggests that people in Serbia recognize the importance of insurance and are willing to invest in it to protect themselves against potential financial losses. The National Bank of Serbia played a significant role in producing financial statements of insurance businesses, which was a vital factor in the selection of the criteria for analysis in the paper based on the facts present in financial statements. The insurance sector invests heavily, with the most crucial assets for insurance companies being shares, stocks, mortgages, loans, equipment, and intangible investments. The primary responsibilities of insurance businesses are to collect premiums and pay claims, and investment choices have a significant impact on how well the insurance sector performs. Insurance companies play a crucial role in society by providing financial protection to individuals and businesses against the risks of unforeseen events. They operate by pooling the premiums of policyholders and using that money to pay out claims to those who experience covered losses. The biggest advantage of insurance is that it helps to mitigate risk and provide financial security. Without insurance, individuals and businesses would be forced to bear the full financial burden of any losses or damages that they may experience, which could be catastrophic. Insurance allows individuals and businesses to transfer some of the risks to the insurance company, which can help to protect them from financial ruin. However, insurance companies are also businesses that need to make a profit to stay operational. They do this by charging premiums that are higher than the expected payout for claims, and by investing the premiums in various financial instruments to generate additional income. As a result, some critics argue that insurance companies may prioritize their profits over the needs of policyholders. Overall, insurance companies serve an important function in society by providing financial protection against risk. However, it is important for consumers to carefully evaluate their insurance options and understand the terms and conditions of their policies, to ensure that they are adequately covered and receive the full benefits of their insurance.

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